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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

w/Enforcement Addendum

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE: MAR 08 2000

SUBJECT: **ENFORCEMENT ACTION MEMORANDUM** - Request for Approval of a Non-Time Critical Removal Action at the Granville Solvents, Inc. Site, Granville, Ohio (Site ID#: 05DT)

FROM: Kevin Adler
Remedial Project Manager *K. Adler*

TO: William E. Muno, Director
Superfund Division

THRU: Richard Karl, Chief
Emergency Response Branch

I. PURPOSE

This action memorandum provides documentation for and requests approval of the proposal to conduct a non-time-critical (NTC) removal action at the Granville Solvents, Inc. (GSI) site, Granville, Licking County, Ohio. The proposed NTC removal action would be protective of human health and the environment by preventing the migration of hazardous substances from the site. The removal action will be undertaken by the Granville Solvents Site Potentially Responsible Party (GSS PRP) Group under the September 1994 Granville Solvents, Inc. site Administrative Order on Consent (AOC).

The GSI site is located about 1/3 mile southwest of the Granville downtown business district. It is located adjacent to a residential area and to several commercial and light industrial businesses. The village of Granville's municipal well field is located approximately 700 feet to the west, in the direction of groundwater flow from the site. The GSS PRP Group, in accordance with the AOC, has already installed a groundwater pump and treat system at the site, both to clean up a groundwater contaminant plume emanating from the site and to act as a hydraulic barrier to prevent the plume from impacting the Granville water supply wells.

The proposed NTC removal action for the GSI site would include the installation of a replacement groundwater extraction well into the currently operating groundwater

contaminant plume cleanup system to enhance its effectiveness; the installation and operation of a soil vapor extraction system, using pneumatic fracturing to enhance soil vapor extraction (SVE) effectiveness, to remove VOCs from the vadose zone to prevent the further leaching of the VOCs into the groundwater beneath the site; and the periodic monitoring of the progress of the soil and groundwater cleanup programs to ensure that the remedy as designed remains protective of human health and the environment.

The proposed action is being conducted as a non-time-critical removal action since U.S. EPA determined that a planning period of at least 6 months was available before on-site activities must be initiated. Accordingly, U.S. EPA and the GSS PRP Group conducted an Engineering Evaluation and Cost Analysis (EE/CA) at the site. The EE/CA was completed in October 1999. Based upon the EE/CA, it is estimated that the proposed NTC removal action will cost \$2.4 million and require up to 5 years to complete the removal of targeted VOCs from the soil. The ongoing groundwater cleanup action would continue to operate for an estimated 5 years after completion of the soils cleanup before groundwater cleanup standards are achieved.

The GSI site is not included on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS identification number for the GSI site is OHD004495412.

A. Site Description

1. Removal Site Evaluation

a. Location and Environmental Justice Analysis

The GSI site is located at 300 Palmer Lane, Granville, Licking County, Ohio (see Appendix A - Figure 1), about 1/3 mile southwest of the downtown district. The site is a 1.5-acre triangular-shaped parcel located adjacent to a residential area and to several commercial and light industrial businesses. The site is bordered by Palmer Lane on the north and west, to the east by the Cherry Street overpass, and by a bicycle and walking path on the south and west (see Appendix A - Figure 2). The village of Granville's municipal well field is located approximately 700 feet to the west. The site is currently zoned for commercial use.

In Ohio, the low-income population percentage is 30% and the minority population percentage is 13%. To meet Region 5's Environmental Justice concern criteria, the area within a one-mile radius of the GSI site must have a population percentage that is twice the state low income percentage or twice the minority percentage. These levels are 60% and 26%, respectively.

At the GSI site, the low income population percentage within a two-mile radius is 3% and the minority population percentage is 4% as determined by Landview III environmental justice analysis (1990 census data). Therefore, the GSI site does not meet Region 5's environmental justice criteria based on population demographics as defined in the guidance document "Region 5 Interim Guidelines for Identifying and Addressing a Potential Environmental Justice Case (June 1998)."

b. Hazardous Materials

Reportedly, Granville Solvents, Inc. operated a petroleum bulk storage, distribution, and recycling business on the site beginning in 1958. In about 1980, the company ceased its petroleum-related business and began a dry-cleaning solvents-reclamation and recycling business that it operated until it was ordered by the Licking County Court to cease operations in 1986. The facility used a total of 15 aboveground and underground steel storage tanks to manage its waste reclamation business and received wastes for recycling in 55-gallon drum size or larger quantities. When closed in 1986, Granville Solvents, Inc. left behind a large number of containers, drums and storage tanks containing an estimated 55,000 gallons of various chlorinated- and nonchlorinated-hydrocarbon solvents and waste materials on the property. The chlorinated- and nonchlorinated-hydrocarbon solvents, including trichloroethene and benzene, have leaked into the ground and are a source of contaminants for the groundwater plume beneath the site (see Appendix A - Figure 2).

c. Discovery and Early Actions

In 1990 and 1991, the Ohio Environmental Protection Agency (Ohio EPA) began site cleanup activities, including the removal and disposal of all stored waste material and containers. Ohio EPA excavated and removed the underground storage tanks and their contents, tested the soil for residual contamination, and installed 15 groundwater wells on and around the property to monitor groundwater quality at the site. Between 1991 and 1994, Ohio EPA periodically sampled some of the monitor wells, detecting levels of both chlorinated and nonchlorinated volatile organic compounds (VOCs) in the groundwater beneath the site and in nearby off-site wells (see Appendix A - Figure 2). A 1993 water sample showed that contamination from the site had moved to within 400 feet of one of Granville's water supply wells. Later, Ohio EPA referred the GSI site to the U.S. EPA to address any threats to human health and environment under Superfund authority.

U.S. EPA performed a site inspection in 1993 and evaluated the groundwater sampling results previously obtained by Ohio EPA. Surface and subsurface soil sampling results showed high levels of VOCs, including trichloroethene (TCE) and benzene, plus lower levels of inorganic contaminants such as lead and chromium. In January 1994, Ohio EPA requested that the village of Granville shut down the production well (PW-1) (see

Attachment A - Figure 2) closest to the GSI site to reduce the possibility that the well would begin to pump contaminated water from the site into the village drinking water supply.

2. Physical Location

The GSI site is a 1.5-acre property located within the village of Granville, Ohio. The site contains a few small, dilapidated wooden buildings that were used to house the recycling equipment of Granville Solvents, Inc. and also a metal-sided building erected by the GSS PRP Group in 1994 to house the water treatment system. The site is adjacent to Raccoon Creek to the south and there are scattered homes to the north. The site is fenced and a bicycle path runs by the site. Although the Granville water supply wellfield is next to the site, the drinking water supply has not been impacted by the groundwater contaminant plume. An estimated population of 4,000 persons live within the Granville area.

3. Site Characteristics

The site consists of slightly sloping topography within the vicinity of Palmer Lane and is at least 20 feet below the Cherry Street overpass. The bicycle path to the south is located on the top of a ridge beyond which the topography breaks down sharply into Raccoon Creek. The GSS PRP Group erected a fence around the site in 1994 to prevent casual contact with impacted soils until any site cleanup actions were complete.

4. Release or Threatened Release into the Environment of Hazardous Substances, Pollutants, or Contaminants

a. Hazardous Substances and Quantities

Sampling results by Ohio EPA, U.S. EPA, and the GSS PRP Group site inspection and subsequent sampling events, as presented in the EE/CA, show that VOCs are present in the vadose zone at concentrations above 20 ppm. The EE/CA estimates that 4,600 cubic yards of soil are impacted by VOCs above recommended cleanup levels, with TCE and perchloroethene (PCE) being the primary contaminants of concern. More than 20 chemicals of concern have been identified in the groundwater contaminant plume at aggregate concentrations above 2000 ppb in some areas. VOCs above their respective (Safe Drinking Water Act) Maximum Contaminant Levels (MCLs) have been detected in the groundwater up to 600 feet beyond the site property boundaries.

b. Threat of Release or Exposure

Vadose zone soils impacted by VOCs are subject to leaching of hazardous substances into the groundwater beneath the site and ultimately into the adjacent municipal well

system should the releases go unchecked. The site fence functions to prevent casual access to the contaminated soil zone areas, but would not serve to prevent animals or persistent trespassers from coming into contact with the impacted soil.

5. NPL Status

The GSI site is not on the NPL and has not been proposed for addition to the NPL.

B. Other Actions to Date

In early 1994, U.S. EPA identified over 100 PRPs that may have brought or may have arranged to have brought the hazardous materials to the GSI site. In February 1994, a number of these parties formed the GSS PRP Group and began to collect site data to perform any necessary cleanup actions at the site. In August 1994, 73 of the PRPs (some of whom comprised the GSS PRP Group) signed an Administrative Order on Consent (AOC) with U.S. EPA to take actions necessary to clean up the GSI site.

Cleanup requirements under the AOC include the periodic monitoring of groundwater quality, pumping and treatment of groundwater to meet certain cleanup goals, performance of a soil cleanup action to both prevent further groundwater contamination and to reduce the risk (if any) associated with the direct contact with site contaminants, and the replacement of the potentially impacted municipal well capacity for the village of Granville due to the groundwater contaminant plume moving off of the site towards the well field. The AOC became effective in September 1994.

The GSS PRP Group installed and began operating a groundwater pump and treat system in December 1994 to both clean up the groundwater and to halt the further movement of groundwater contamination from the site towards the village of Granville municipal water supply wells. The GSS PRP Group installed two on-site pumping wells (see Attachment A - Figure 2) and a water treatment system to remove contaminants from the pumped water. Pumping contaminated water from these two wells helps to draw the contaminant plume towards the pumping wells and away from the municipal well field. To date, more than 600,000,000 gallons have been pumped to the treatment system for processing. The total pumping rate is currently averaging about 250 gallons per minute. About 1 pound of solvents is being removed from the pumped water and discharged from the treatment system to the atmosphere every 3-4 days. Treated water is discharged into Raccoon Creek under discharge requirements issued by Ohio EPA.

Also in December 1994 the GSS PRP Group installed a new production well for the Granville water supply system to replace the production well that the village had shut down earlier in the year.

Later, the GSS PRP Group continued its evaluation of site contamination levels and began to prepare an Engineering Evaluation and Cost Analysis (EE/CA).

In 1995 and 1996, the GSS PRP Group installed a number of groundwater monitoring wells in and around the site to fully determine the location of groundwater contamination, what the contamination consisted of, and where it may be moving off-site. The monitoring wells were sampled in accordance with an approved Groundwater Monitoring Plan. Also in 1996, the GSS PRP Group performed a soil study designed to locate and identify soil contaminants and to determine what the properties of the soils are in order to find out where the soil contaminants may move to and how they can be cleaned up. The results of the soils study are contained in the December 1996 Soils Data Report.

Based upon the results of the ongoing groundwater monitoring and the soils investigation, the GSS PRP Group prepared a Groundwater Flow and Contaminant Fate and Transport Model to estimate where site and off-site groundwater contaminant levels would end up if no soils cleanup work was done at the GSI site. The results of the computer modeling were then used to predict whether a soil cleanup action was appropriate, or whether the current groundwater pump and treat program was sufficient to cost-effectively protect human health and the environment. According to the Groundwater Flow and Contaminant Fate and Transport Model, it is estimated that the groundwater system would need to be operated at least another 17-20 years before groundwater cleanup levels could be reached. This time period would be greatly reduced by cleaning up the contaminated soils which are a continual source of new groundwater contamination.

Based upon all the above work, the GSS PRP Group prepared the EE/CA for U.S. EPA review and approval. The EE/CA summarizes site contaminant levels and associated risks to human health and the environment and contains recommended alternatives for cleaning up the contaminants in the vadose zone. U.S. EPA approved the EE/CA in October 1999 and placed a copy of the EE/CA into the administrative record.

C. State and Local Authorities' Role

1. State and Local Action to Date

As stated above, Ohio EPA began site investigation and cleanup work in 1990. Ohio EPA spent approximately \$1,000,000 to stabilize the site before it referred the site to U.S. EPA for further cleanup. No local authorities are directly involved with the cleanup action.

2. Potential for Continued State/Local Response

U.S. EPA anticipates that all cleanup actions will be performed by the GSS PRP Group under the AOC. Thus, neither the state or the local government need to respond in a substantive manner or provide financial resources to conduct a removal action at the site.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

As outlined below, conditions at the GSI site present a threat to public health or welfare as specified in § 300.415(b)(2) of the NCP.

A. Threats to Public Health or Welfare

Conditions observed during U.S. EPA's investigation of the GSI site that constitute a threat to public health include:

- **Actual or potential exposure to nearby human populations or the food chain from hazardous substances or pollutants or contaminants.** Results of U.S. EPA's site investigation indicate the presence of VOCs above 20 ppm in soil and 2000 ppb in site groundwater. Many substances are present in the groundwater beneath the site above MCLs. The potential exposure to the groundwater contaminants would occur through the ingestion of impacted drinking water should someone dig a well within the contaminant plume on site. Levels of VOCs in soils present a very low risk (within the acceptable risk range) to future workers due to direct contact.
- **Actual or potential contamination of drinking water supply or sensitive ecosystem.** The groundwater contaminant plume is migrating towards the village of Granville municipal well field, without action there is the potential exposure to the contaminants through the ingestion of impacted drinking water.
- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** Rain and snowmelt are causing the release and migration of the VOCs in the vadose zone into the groundwater beneath the site. This would continue should no mitigative work be performed. VOCs have been detected in the groundwater up to 600 feet beyond the site property boundaries, with the highest concentrations found beneath the site.

B. Threats to the Environment

Conditions observed during U.S. EPA's investigation of the GSI site that constitute a

threat to the environment include:

- **Actual or potential exposure to nearby animals or the food chain from hazardous substances or pollutants or contaminants.** Contact with the high levels of VOCs in the vadose zone may cause cancers or other ill effects in burrowing animal populations. However, the potential has not been quantified or estimated. The groundwater contaminant plume has not entered Raccoon Creek or its sediments, indicating that the hazardous substances are not impacting aquatic organisms at this time.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of VOCs, many of which are hazardous substances, pollutants, or contaminants, from the GSI site, if not addressed by implementing the response action selected in this Action Memorandum, may impact the Granville municipal well field and therefore present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Action

The response action summarized below in this memorandum and described more fully in the EE/CA (see Attachment B) directly addresses actual or threatened releases of hazardous substances, or pollutants, or contaminants at the site which pose an imminent and substantial endangerment to public health and safety. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

1. Proposed Action Description - Soil Vapor Extraction Enhanced by Pneumatic Fracturing (and other actions)

The proposed alternative consists of the removal of soil VOC-contaminants by the use of Soil Vapor Extraction (SVE) enhanced by pneumatic fracturing. SVE consists of the installation of wells into the contaminated soil areas above the water table and placing a vacuum on these wells (see Attachment A - Figure 3). The vacuum removes soil gases, including the volatile contaminants, from the ground and routes them to a treatment unit for destruction of the contaminants, if necessary. Since the GSI site soils contain a lot of clay, air pressure will be used to fracture the soil layers, creating cracks through which the vacuum can propagate (pneumatic fracturing). Creating such fractures should enhance the ability of the SVE system to remove the VOCs from the soil zone. It is estimated that it would take a year or more to construct the SVE system and up to 5 years to treat the contaminated soils to remove the future source of

groundwater contamination.

Also, the groundwater pump and treat system would be modified by installing a replacement pumping well in the extraction network to increase the rate of groundwater removal in the more highly contaminated area of the contaminant plume. It is estimated that after the SVE system has completed the soils cleanup action, site groundwater would be extracted for at least 5 more years before achieving the groundwater cleanup goals.

Site-wide groundwater monitoring would continue to occur during and after the groundwater cleanup effort.

The cost of the soil cleanup is estimated to total \$2,450,000, including future groundwater cleanup expenses.

The proposed removal action is protective of human health and the environment, is effective, implementable, and is cost effective. The proposed NTC removal action is a final cleanup remedy, that is, no further cleanup work would have to be performed under the removal AOC once the proposed removal action is completed.

2. Contribution to Remedial Performance

The proposed NTC removal action would reduce the major, long-term threats posed through ingestion, inhalation, and direct contact with the hazardous substances found in the groundwater at the GSI site. U.S. EPA will continue to monitor cleanup progress and perform periodic reviews to determine if future or additional cleanup actions are necessary for the protection of human health and the environment.

3. Description of Alternative Technologies

Soil vapor extraction is an innovative technology that is also a presumptive remedy for VOCs in soil.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

a. Federal ARARs and TBCs

The proposed NTC removal action would comply with federal ARARs determined to be practicable for the GSI site as described in the ARARs analysis document (see Attachment F) which was made a part of the administrative record.

b. State ARARs and TBCs

Informal discussions with Ohio EPA indicated that in general the proposed removal action would comply with state ARARs. Ohio EPA has not issued a formal listing of state ARARs to U.S. EPA.

5. Project Schedule

The proposed NTC removal action is projected to begin in Spring 2000 and will require approximately 12 months to complete the design and installation of the SVE system and replacement groundwater extraction well. Uncertainties which may affect implementation of the proposed NTC removal action include: 1) seasonal conditions which may postpone the construction of the SVE system and replacement extraction well during severely wet weather; and 2) securing real property access agreements, easements, and/or rights of way. These uncertainties may affect the time required to complete the removal action, and to some extent, the overall project cost.

6. Post Removal Site Control

Completion of all removal activities at the GSI site will require the GSS PRP Group to monitor groundwater quality beneath the site area for 10 years or more, unless future circumstances warrant otherwise.

B. Estimated Costs

The direct and indirect costs for this NTC removal action are estimated to total \$2.4 million.

VII. EXPECTED CHANGE IN THE SITUATION SHOULD THE ACTION BE DELAYED OR NOT TAKEN

Delayed action would increase the potential for widespread release of VOCs into the groundwater beneath the site. If this action is not completed, people may be exposed to hazardous substances should the groundwater contaminant plume impact the nearby municipal well field.

VIII. OUTSTANDING POLICY ISSUES

The future use of the property is assumed to be commercial/industrial in accordance with the current zoning of the property. Should the future use of the site change, U.S. EPA may require a reevaluation of the cleanup goals under the AOC to determine if changes are necessary to maintain protection of human health and the environment under the new site use assumptions.

IX. ENFORCEMENT

U.S. EPA has identified over 100 companies as being potentially responsible parties at this site. At this time, over 80 companies (several more companies have signed the AOC, joining the original 73 - see page 5) have signed the AOC and are implementing the required cleanup actions. The companies have been determined to be viable and able to properly and promptly perform the proposed response action at the site.

For administrative purposes, the enforcement strategy for the GSI site is contained in the Enforcement Addendum (see Attachment D).

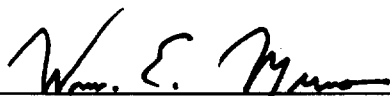
X. RECOMMENDATION

This decision document represents the selected non-time-critical removal action for the Granville Solvents, Inc. site, Granville, Licking County, Ohio, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. This decision is based on the Administrative Record for the GSI site (see Attachment C).

Conditions at the GSI site meet the NCP § 300.415(b)(2) criteria for a non-time-critical removal action and I recommend your approval of the proposed NTC removal action.

You may indicate your decision by signing below:

APPROVE:


William E. Muno/Director
Superfund Division

3/8/00
Date

DISAPPROVE:

William E. Muno, Director
Superfund Division

Date

Attachments:

- A. Figures 1-3
- B. Engineering Evaluation/Cost Analysis (by reference)
- C. Administrative Record Index
- D. Enforcement Addendum (Enforcement Confidential)
- E. Responsiveness Summary
- F. Federal ARARs

cc: M. Chezik, U.S. Department of Interior (w/o enforcement addendum)
F. Myers, Ohio EPA (w/o enforcement addendum)
K. Mould, OERR (w/ enforcement addendum)

GRANVILLE SOLVENTS SITE

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(1 PAGE)

REDACTED

NOT RELEVANT TO THE SELECTION OF REMOVAL ACTION

ATTACHMENT A

SITE FIGURES

EXPLANATION

● MONITOR WELLS

■ EXTRACTOR WELLS

nonresponsive

Figure 2. Granville Solvents, Inc. Site Detail - Groundwater Contaminant Plume

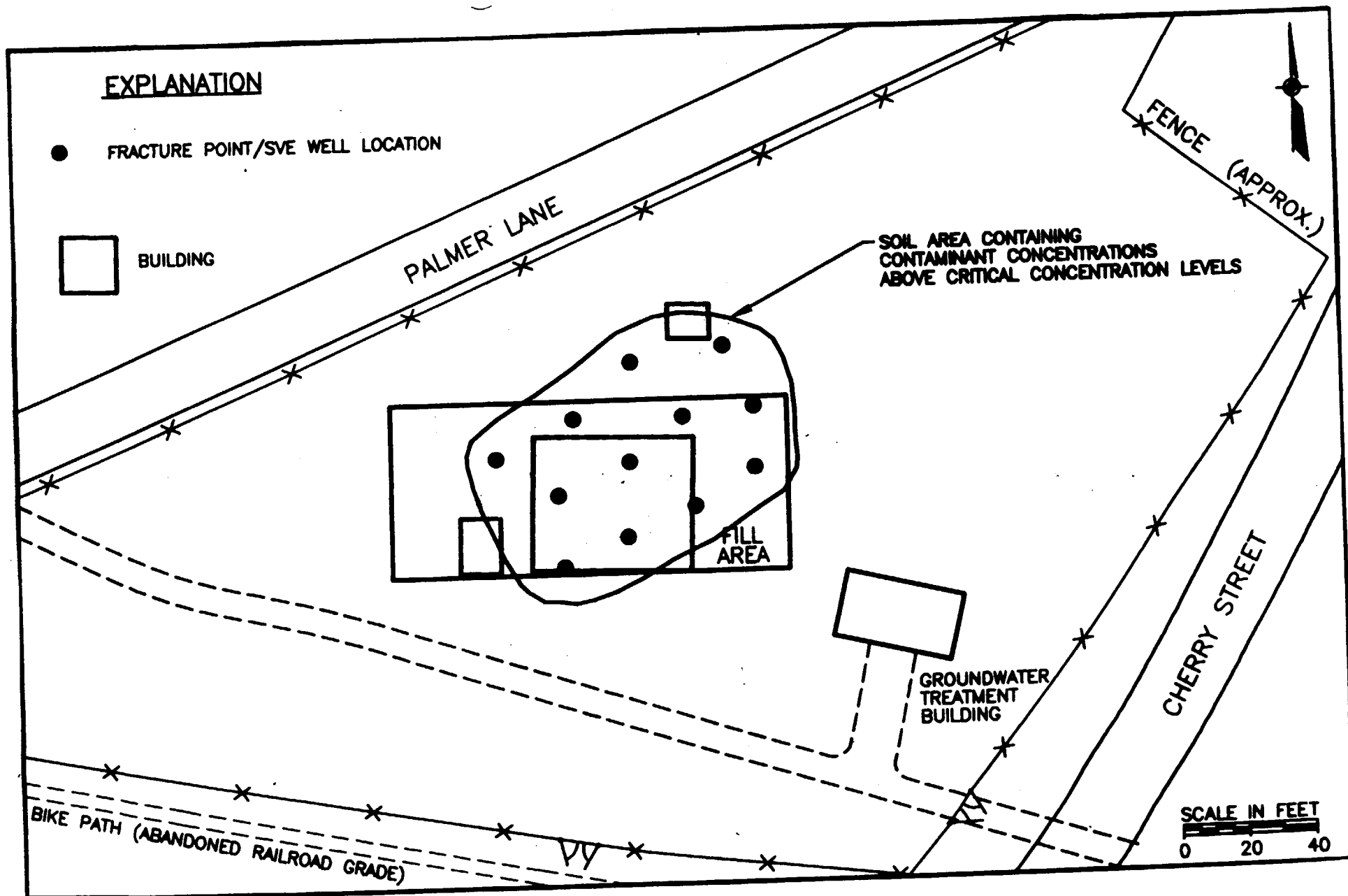


Figure 3. Contaminated Soils Area - Proposed Location of SVE Wells

ATTACHMENT B

ENGINEERING EVALUATION/COST ANALYSIS

(Incorporated by Reference)

The Engineering Evaluation/Cost Analysis (EE/CA) is incorporated by reference.

ATTACHMENT C

ADMINISTRATIVE RECORD INDEX

ATTACHMENT C

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
GRANVILLE SOLVENTS SITE
GRANVILLE, LICKING COUNTY, OHIO

ORIGINAL
JANUARY 6, 1994

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	00/00/00	Reeb, J., Granville Solvents, Inc.	U.S. EPA	General Information and Manifests by Company Submitted by Granville Solvents, Inc.	778
2	08/30/85	Schneider, W., Ohio EPA	U.S. EPA	Preliminary Assessment & Narrative w/Attachment	7
3	06/00/90	Clean Harbors Of Kingston, Inc.	Ohio EPA	Ohio EPA Mobilization Order #145 1: Summary Of Events, Final Report	61
4	08/26/92	Compliance Solutions, Inc.	Ohio EPA	Ohio EPA Mobilization Order #145 02: Interim Action, Final Report	224
5	01/13/93	Compliance Solutions, Inc.	Ohio EPA	Ohio EPA Mobilization Order #145 03: Interim Action, Final Report	84
6	04/09/93	Plunkett, D., Village of Granville	Schregardus, D., Ohio EPA	Letter re: Request for Assistance in Obtaining U.S. EPA Designation as a Non Time Critical Removal Site	2
7	06/03/93	Fay, L., Ohio EPA	Griffin, J., U.S. EPA	Letter re: Ohio EPA's Request for U.S. EPA Assistance	4
8	06/03/93	Schregardus, D., Ohio EPA	Plunkett, D., Village of Granville	Ohio EPA's Response to April 9, 1993 Letter Concerning U.S. EPA Remediation	2
9	09/10/93	Myers, F., Ohio EPA	Kaiser J., PRC Environmental Management, Inc.	Letter re: Analytical Results for Ground Water Monitoring Wells MW-7 and MW-8	1

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10	12/10/93	Myers, F., Ohio EPA	Warren, K., U.S. EPA	Laboratory Reports for the November 3, 1993 Sampling for Monitoring Wells MW-7, MW-8 and Granville Water Well #1	13
 <u>UPDATE #1</u> <u>MAY 18, 1994</u> 					
1	00/00/00	Brown, R., Groundwater Technology, Inc.		Excerpt from "Handbook of Bioremediation" Section 4: "Treatment of Petroleum Hydrocarbons In Ground Water by Air Sampling"	26
2	00/00/00	Granville Solvents, Inc.	U.S. EPA	General Information and Manifests by Company Company Submitted by Granville Solvents, Inc. (Revised May 18, 1994)	1155
3	00/00/00	Pankow, J., et al.		Journal Article: "Air Sparging in Gate Wells In Cutoff Walls and Trenches for Control of Plumes of Volatile Organic Compounds (VOCs)"	10
4	00/00/00	Marley, M., et al.		Journal Article: "Case Study on the Application of Air Sparging as a Complimentary Technology to Vapor Extraction at a Gasoline Spill Site in Rhode Island:	5
5	00/00/00	Ji, W., et al.		Journal Article: "Laboratory Study of Air Sparging: Air Flow Visualization"	12
6	00/00/00	Piniewski, R., et al.		Journal Article: "Vacuum Extraction Groundwater Sparging System for In Situ Remediation of Soil and Groundwater"	9
7	00/00/00	Johnson, R., et al.	U.S. EPA	Paper: "Experimental Examination of Integrated Soil Vapor Extraction Techniques"	12

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8	00/00/00	Various /	U.S. EPA	Responses to 104(e) Requests by Company	3926
9	06/15/89	OERR; U.S. EPA	Addressees	Guidance Memorandum re: Control of Air Emissions from Superfund Air Strippers at Superfund Groundwater Sites (OSWER Directive 9355.0-28)	5
10	04/16/92	Loden, M., Camp Dresser & McKee, Inc.	U.S. EPA	Report: "A Technology Assessment of Soil Vapor Extraction and Air Sparging" (Draft)	14
11	00/00/93	Johnson, R., et al.		Journal Article: "An Overview of In Situ Air Sparging"	9
12	00/00/94	Fan, C., et al.; U.S. EPA	U.S. EPA	Paper: "In Situ Tech- nologies for Remediation of Organic Chemicals Contaminated Sited: A Critical Review"	16
13	00/00/94	Fan, C., and Tafuri, A.; U.S. EPA	U.S. EPA	Symposium Paper: "Case Study of the Application of Soil Vapor Extraction: Air Sparging Technology to Leaking UST Site"	5
14	00/00/94	Fan C., and Tafuri, A., U.S. EPA	U.S. EPA	Tables and Figures: "Case Study of the Application of Soil Vapor Extraction Air Sparging Technology to Leaking UST Site"	17

UPDATE #2
DECEMBER 12, 1994

1	10/00/92	ATSDR/ Public Health Service/U.S. DHSS	U.S. EPA	Toxicological Profile for Acetone (Draft for Public Comment)	174
2	09/07/94	U.S. EPA	Respondents	Administrative Order by Consent	126
3	09/29/94	Hanlon, E., U.S. EPA	Plunkett, D., Village of Granville	Letter re: Response to Questions Raised at the September 14, 1994 Public Meeting	10

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<u>UPDATE #3</u> AUGUST 16, 1995					
1	07/24/95	Granville Solvents PRP Group/ Metcalf & Eddy	U.S. EPA	Revised October 19, 1994 Work Plan for the Removal Action	178
2	07/25/95	Granville Solvents PRP Group/ Metcalf & Eddy	U.S. EPA	Revised March 15, 1995 Groundwater Monitoring Program Plan for the Removal Action	49
<u>UPDATE #4</u> JULY 27, 1999					
1	11/29/93	PRC Environmental Management, Inc.	U.S. EPA	Screening Site Inspection/Site Evaluation: Granville Solvents Site	21
2	01/31/95	Metcalf & Eddy, Inc.	U.S. EPA	Removal Action Aquifer Pumping Test Report: Granville Solvents Site	116
3	07/24/95	Metcalf & Eddy, Inc.	U.S. EPA	Work Plan for the Removal Action: Granville Solvents Site (Revision 4 to the October 19, 1994 Report)	179
4	07/25/95	Metcalf & Eddy, Inc.	U.S. EPA	Removal Action Groundwater Monitoring Program Plan: Granville Solvents Site (Revision 3 to the March 15, 1995 Report)	5
5	12/08/95	Metcalf & Eddy, Inc.	U.S. EPA	Design Technical Memorandum for the Remediation of Impacted Soils: Granville Solvents Site	91
6	01/00/96	Metcalf & Eddy, Inc.	U.S. EPA	Quality Assurance Project Plan: Granville Solvents Site	651
7	09/00/96	Metcalf & Eddy, Inc.	U.S. EPA	Monitoring Well Installation Report: Granville Solvents Site	91

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8	09/00/96	Metcalf & Eddy, Inc.	U.S. EPA	Soil Data Report for the Remediation of Impacted Soils: Granville Solvents Site	89
9	12/00/96	Metcalf & Eddy, Inc.	U.S. EPA	Addendum 1-Monitoring Well Installation Report: Granville Solvents Site	62
10	12/00/96	Metcalf & Eddy, Inc.	U.S. EPA	Addendum 1-Soil Data Report: Granville Solvents Site	7
11	12/20/96	Metcalf & Eddy, Inc.	U.S. EPA	Groundwater Flow and Contaminant Fate and Transport Model: Granville Solvents Site	60

UPDATE #5
FEBRUARY 22, 2000

1	00/00/00	Adler, K., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Request for Approval of a Non-Time Critical Removal Action at the Granville Solvents Site (PENDING)
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ATTACHMENT D

ENFORCEMENT CONFIDENTIAL

ENFORCEMENT ADDENDUM

**GRANVILLE SOLVENTS SITE
ENFORCEMENT CONFIDENTIAL ADDENDUM**

(1 PAGE)

FEBRUARY, 2000

REDACTED

NOT RELEVANT TO THE SELECTION OF REMOVAL ACTION

ATTACHMENT E

RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY

GRANVILLE SOLVENTS, INC. SITE GRANVILLE, LICKING COUNTY, OHIO

This Responsiveness Summary addresses concerns expressed by the public in written and oral comments received by U.S. EPA regarding the proposed non-time-critical removal action at the Granville Solvents, Inc. (GSI) site.

Community Relations Background

U.S. EPA released the Engineering Evaluation/Cost Analysis (EE/CA) and Proposed Plan for Removal Action for public review on January 10, 2000, and a copy of the Proposed Plan fact sheet was mailed to residents in the site area. A public comment period regarding the Proposed Plan opened on January 10, 2000, and closed 30 days later on February 9, 2000. U.S. EPA conducted a public meeting at the Granville Village Hall on January 20, 2000, to explain the alternatives evaluated in the EE/CA, to explain potential health risks, and to discuss the proposed removal action alternative. A question and answer period was held during the meeting and a formal comment period was announced. All documents it used for selection of the proposed cleanup alternative are made available for review in the Administrative Record maintained at the Granville Public Library, 217 E. Broadway, Granville, Ohio.

Approximately 40 residents and students of the local college attended the public meeting.

U.S. EPA received no written or verbal comments concerning the proposed plan at the public meeting or during the public comment period.

ATTACHMENT F

ARARs ANALYSIS

Analysis of Applicable or Relevant and Appropriate Requirements
of State and Federal Environmental Laws and Regulations (ARARs)

Granville Solvents, Inc. Site
February 2000

The chemicals of concern at this site include chlorinated and nonchlorinated VOCs. Contamination of the site is located on and below the surface of the property and off-site. The disposal is believed to have occurred between 1950 and 1986.

The selected removal activities will comply with all substantive Federal and any more stringent State environmental ARARs, to the maximum extent practicable. Since this is a removal action the National Oil and Hazardous Substance Contingency Plan (NCP) may allow for some deviation from these identified ARARs due to the exigencies of the situation, 40 CFR 300.415(j). Any deviation will be subject to U.S. EPA prior approval. The major ARARs that will be attained by the components of the selected removal action are listed below. The list of ARARs below is not intended to be comprehensive, however, and further refinement of the ARARs may be necessary prior to initiation of on-site activities depending on the activities being implemented.

- 1. Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901, 40 CFR 260.** The permitting requirements of RCRA will not be applicable as all of the remedial work will be done on or near the site. Though procedural requirements do not apply, the selected action does comply with substantive requirements regarding the treatment, storage or disposal of hazardous waste.
- 2. Clean Air Act, 42 U.S.C. 7401, 40 CFR 50 & 52, Subpart O.** The Clean Air Act is applicable to the activities associated with both soil and groundwater removal options. Additionally, any more stringent substantive provision(s) of the Ohio equivalent to the Clean Air Act shall be complied with. During these activities, the national ambient air quality standards for particulate matter, fugitive dust, and VOC-emissions shall not be exceeded.
- 3. Clean Water Act, 33 U.S.C. 1251 and its implementing regulations.** There are ongoing discharges from the water treatment system to Raccoon Creek in accordance with discharge standards provided by Ohio EPA. To the extent that any of the future land-based excavation activities may cause a discharge of pollutants, the discharge shall be prevented to the maximum extent practicable and consistent with the Clean Water Act and its implementing regulations. Additionally, any more stringent substantive provision(s) of the Ohio equivalent to the Clean Water Act shall be complied with.